An abstract :

Two theories :

(1) how to increase temperature without energy input (if you have 2 sources of temperature you can

have a cycle that generates work. By this work you can have a cycle that create a third source higher or

lower than the two sources).

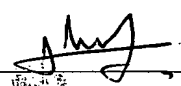(2)how to increase pressure as described in the invention without energy input.

Pumps and compressors working on valves and on theory (2) as described in the invention.

Engine (1) working on compressors that works on valves as described in details in the invention.

Engine (2) working on the decrease of pressure on water and the split of oxygen and hydrogen and the

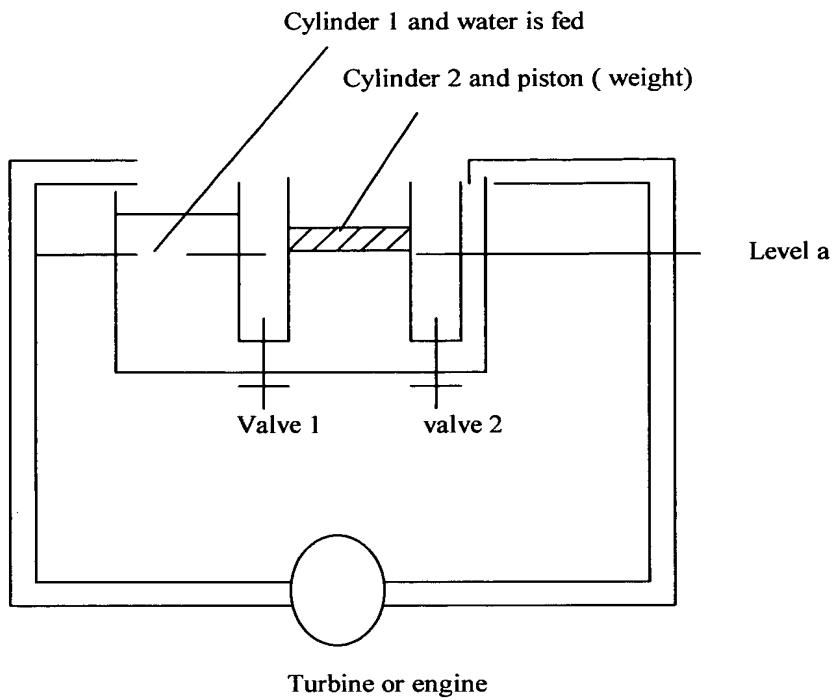Use of the compressor described in the invention to isolate hydrogen and use it as a combustible.

Hanna Albert Awad _____ Date 5/7/2002
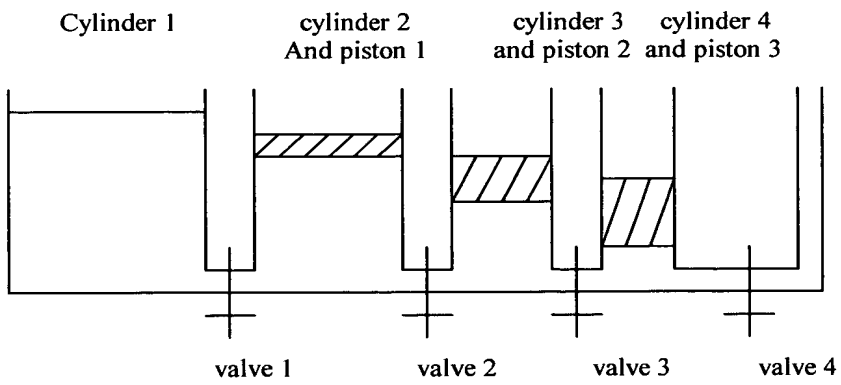
Area of cylinder 2 less than area of cylinder 1

Cylinder 1 and water is fed

Cylinder 2 and piston (weight)

Level a

Valve 1   valve 2

Turbine or engine

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FIG. 2

| Cylinder 1 | cylinder 2 And piston 1 | cylinder 3 and piston 2 | cylinder 4 and piston 3 |

valve 1   valve 2   valve 3   valve 4

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FIG. 3

TWO PIPES
TO COMPRESSOR 1

TWO PIPES
TO COMPRESSOR 2

TWO PIPES
TO COMPRESSOR 3

TWO PIPES
TO COMPRESSOR 4

CLOSED CYLINDER WITH 8 BLADES IN IT
AND A SHAFT

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Fig. 4

Power generation cycle   refrigeration cycle
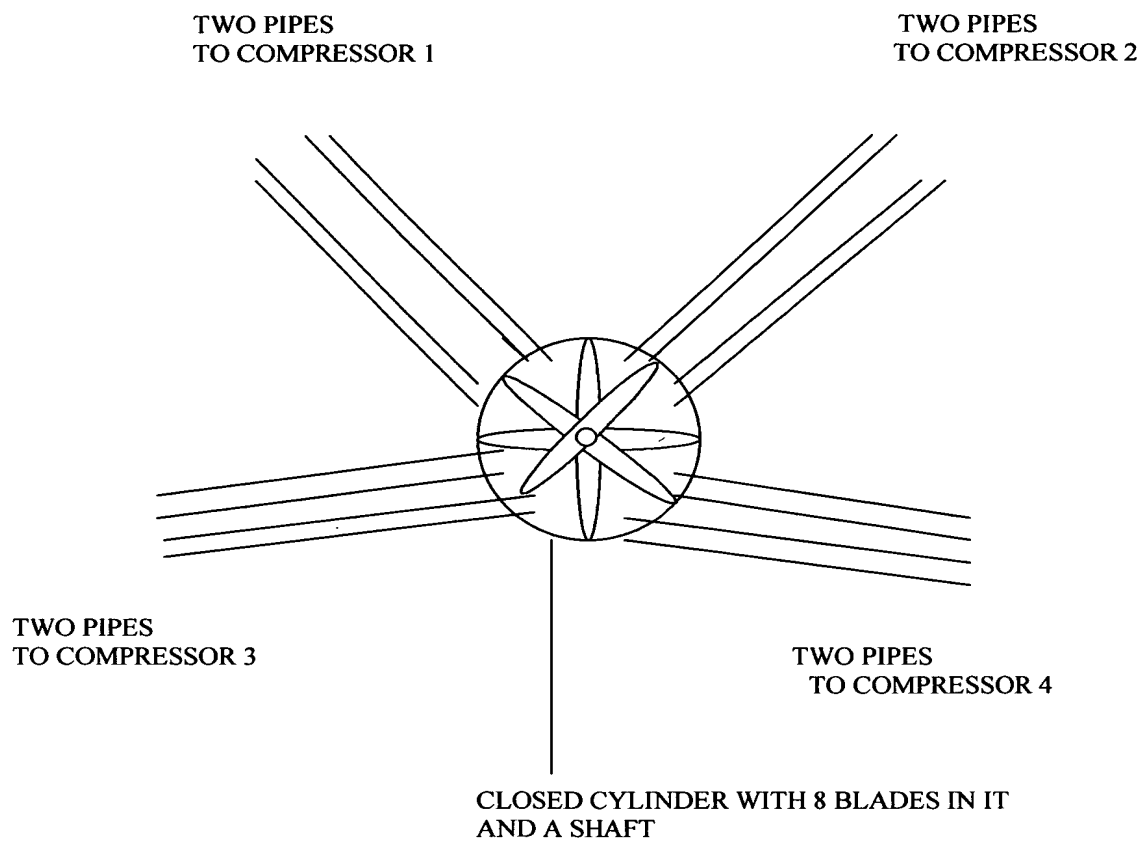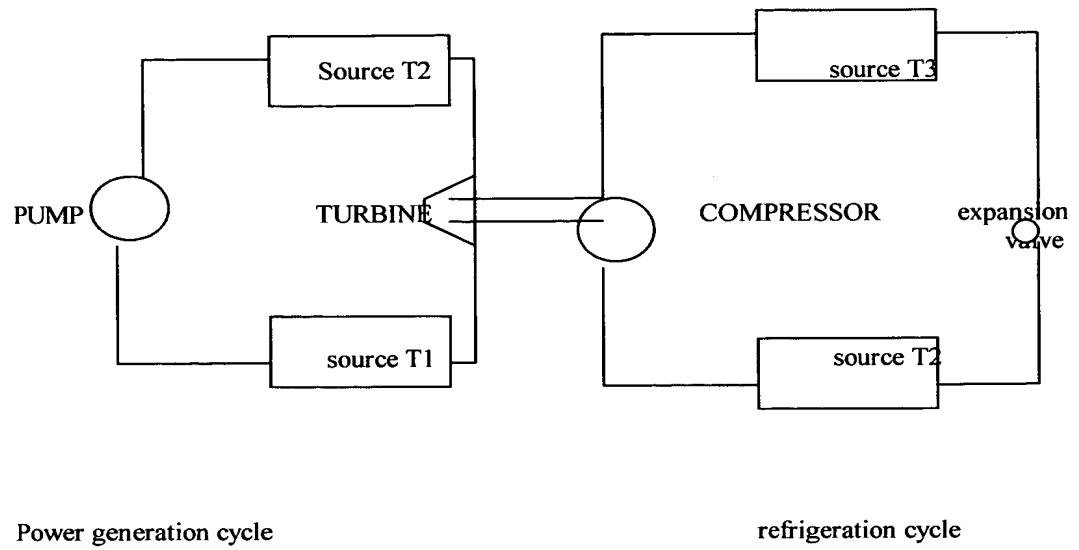
Hanna Albert Awad _____~~~~~~~_____ Date _5/7/2002_

I claim the right for the design, production and sale of pumps, compressors, engines, power stations and

electrical generation and distribution and of the concept of the two engines explained in the invention.
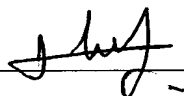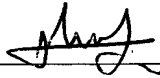

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I claim the right for design , production and sales of pumps, compressors , engines , turbines and power

Generation driven the way explained in the invention and the production and sale of

oxygen & hydrogen the way described in the invention.

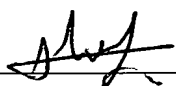Hanna Albert Awad _____ Date 5/7/2002

I claim the right for the design, production and sale of all equipments that uses and have a third source

larger than the 2 available, the way explained in the invention.

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Please accept the correction for the invention :

Application number 09 / 886,862

Filing date   06/21/2001

Applicant Hanna Albert Awad address : Ajaltoun, Kesrouan, LEBANON phone : 011-961-923-5443

TITLE   concepts and their applications, pumps, compressors working on valves and engines working on

those compressors.

1- TITLE OF THE INVENTION : Concepts and their applications, pumps, compressors working on

valves and Engines working on those compressors.

INVENTOR : Mechanical Engineer HANNA ALBERT AWAD

Address 1 : 4721 nathan west, sterling heights, MI 48310 USA (PH. 810-825-2340)

Address 2 : residence Hanna Albert Awad , ajaltoun, kesrouan, Lebanon (ph. 961-923-5443)

Citizenship : Lebanese.

2- CIRCUMSTANCES AND DATE OF CONCEPTION :

In 1990 - I was in Lebanon and I found the concept : if you have two sources of energy, you can create a

third source that has a temperature higher than these two sources by using these two sources.
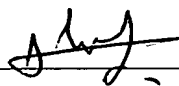
It's application is a Cycle (of heat exchangers, expansion valves, pump or compressor) by creating this

cycle you can create this third source.

Fig. 4 if you have T1 and T2 you can create a power generation cycle with a turbine output. This turbine

output will drive a compressor of a refrigeration cycle to get source T2 from temperature T2 to temperature

T3 higher than T1 and T2.

A multistage cycles will be that power of turbine will drive several compressors of several refrigeration

cycles getting from T2   to   T3   to   T4   etc...

If you have two sources of temperature, you can have a cycle that create power. Using this power you can

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have a cycle that gives you a third source higher or lower than the two sources.

By combining these two cycles or a short cut of these two cycles you can create this third source of

temperature.

In 1992, in Lebanon, I found by analogy, that if you have two sources of pressure, you can create a third

source higher than these two sources by using these two sources.

Its application led to the pump and compressor that works on valves and consequently the engines.

3- DESCRIPTION OF THE INVENTION :

pump : FIG. 1 – It is constituted of two cylinders, one smaller in are than the first one and a free moving

piston on the small cylinder and the system is fed with water from cylinder 1 (the heavier the piston and the

thicker it is, the better). These two cylinders are connected by a pipe and a valve. Subsequently, a pipe is⁻ᵥₑ ·

taken out from cylinder 2 (with a valve). This pipe transmit the pumped water and the pressure.

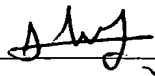FIG. –1- : valve 1- Open, valve 2- closed., equilibrium is reached.

valve 1- closed, valve 2- open, the water is pumped through a pipe

valve 1 open, valve 2 closed, equilibrium is reached and water is fed.

ETC...

A multistage pump leading to ultra high pressures could be constructed by having several cylinders

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Fig. 1 weights in cylinders 1 and 2 above level a should be equal

(density of steel = 7.6). if the area of cylinder 2 is 7.6 smaller than area of cylinder 1, then,

volume * density = area of cylinder 1 * height 1 * 1 = area of cylinder 2 * 7.6 * height 2

that implies area of cylinder 1 * height 1 *1 = area of cylinder 1 / 7.6 * 7.6 * height 2

that implies   height of water in cylinder 1 = height of steel in cylinder 2

so, when valve 1 is open and 2 is closed we have the same levels.

Then, pressure in pipe above level a is equal to

area of pipe * height of water 3 * 1 = height of steel * 7.6 * area of cylinder 2.

If area of pipe is 50 times smaller than area of cylinder 2 then,

Area of cylinder 2 / 50 * height of water 3 = height of steel * 7.6 * area of cylinder 2

Then, height of water 3 in pipe = 50 * 7.6 * height of steel

Then, when valve 2 is open and valve 1 closed, the pressure in the pipe (outlet) will be

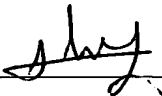= 50 * 7.6 * height of steel.

So water is pumped in the turbine or engine at a pressure of 50 * 7.6 * height of steel and return at zero

pressure in cylinder 1.

A multistage pump or compressor or engine will have several cylinders with smaller areas from 1 to n

And heavier steel pistons from 1 to n. (fig. 2)

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Fig. 3 explains how an engine or turbine can be driven by several pumps

(FIG. 2) (the second one is less in area than the first one, and the third is lesser than the second in area, etc... in order to have large amount of water fed) (and heavy pistons on cylinders, on cylinder three the piston is heavier than the piston on cylinder two, four heavier than three, etc... in order to have a larger compression from cylinder to the other).

FIG. 2 : valve 1 open, other valves closed, feeding of water

valve 2 open, other valves closed, compression or pumping

valve 3 open, other valves closed, more compression in being done
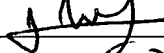
ETC... then we restart from valve 1

Which lead to tremendous pressure.

Compressor : a compressor is the same as the pump but we could put a cap on the water of last pipe (separating water from air and compressing)

a more scientific approach will be to compress a gas instead of water. We can compress other fluids than water but these gases must be heavier than air (we can not compress air by air). As we noted the fluid must be heavier than air and will be fed by gravity through cylinder 1.

A calculation of compression (head and flow) could be done (by using density of fluid, area of cylinders, weight of pistons, and section of pipe)

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In fig. 1 pressure of water in the outlet pipe (water used) = weight of piston over section of pipe.

Valves : electric valves could be used and a reversing contactor could be used between cylinders 1,2 or 2,3 or 3,4 etc… a reversing contactor is activated by a solenoid (when 1 is on, 2 is off and vice versa) with a time delay between activations (waiting for all valves to be activated. All other reversing contactors would have the same delay time)
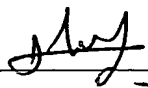
Or we could use every electric valve apart with a time delay (the same time delay for all electric valves, of course the time delay between the on and the off and then after all valves have been activated the on again)

ENGINS : Engine 1 : blades in a cylinder activated by compressors on valves could constitute an engin.

Fig. 3 the blades in the cylinder are activated by pipes all around it (these pipes could have outlets at cylinder as large as the width of the cylinder). Every two consecutive outlets are connected to a compressor that works on valves, one of the two pipes is the return to the first cylinder and the other one is the outlet (pressured) of the compressor. We must have a distance between the two pipes at cylinder larger than the distance between two blades. This creates pressure differences between blades and the blades turns. The blades could turn a shaft which generate power that could be used for everything.

Engine 2 : low suction pressure on water will separate oxygen from hydrogen. The experiment we used to do at school (a lighted match could make oxygen and hydrogen in a glass bowl a drop of water.

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The thunder is that lighted match that makes oxygen and hydrogen water and rain. At low pressures, the water evaporated from the sea is split into oxygen and hydrogen.

It is reversible.

So, a compressor could make such suction pressure on water and separate oxygen from hydrogen. Then, the mixed oxygen and hydrogen are compressed to lead to either oxygen or hydrogen liquifaction and the other one remains gas. Because liquifaction conditions (pressure and temperature) of oxygen differs from liquifaction conditions of hydrogen.

Then the hydrogen could be withdrawn to make the cleanest carburant that powers engines, power plants etc...

So, compressors on valves and water could make the engine of tomorrow.
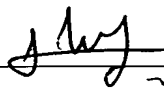
- PURPOSE : we can get pumps , compressors, engines, and power plants that operate without energy consumption

- PARTS : for pumps and compressors (cylinders connected by pipes, heavy pistons, electric valves)

for engine 1 : blades in a cylinder connected to a shaft and compressors that work on valves

for engine 2 : a compressor on valves that make suction pressure and separate oxygen from hydrogen, then a compressor on valves to compress oxygen and hydrogen, then a compressor on valves to suck the liquid (either oxygen or hydrogen) and send it to a hydrogen engine

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- USE : pump and compressor : we feed the first cylinder with fluid and we operate the valves, we get

the pressured fluid.

Engine 1 : we operate the valves of the compressors without feeding, we get a closed circuit at

each compressor and the blades turns and generate power.

Engine 2 : we operate the three compressors on valves consequently with a time delay at first of

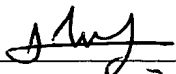operation. Then, we turn the hydrogen engine on.

- NOVEL FEATURES : It is a new field by itself. I never heard or red or met anything like it. I am a

mechanical engineer and I know that this is a new era in power.

- ADVANTAGES : power generated without energy consumption, power without noise and without

pollution.

4- TESTING RESULTS : pump and compressor : I connected a container of water to a cylinder through a

valve and I have put a piston with 20 lbs on top of it in the cylinder and have taken a hose from the cylinder

through a valve. I turned valve 1 on. Water rose in the cylinder. The, valve 1 off, and valve 2 on. I got a jet

of water of approximately 5 meters.

Engine 1 : I took a centrifugal backward bladed fan and closed it up and connected it to four pumps on

valves , every compressor to two pipes making 45 degrees with each other on the fan casing. I opened the

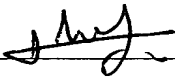four first valves , then I closed them and opened the second four valves . the shaft turned.

Of course, a good design should be done to make this engine and the blades should be extended to the shaft

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This was an experiment and not a well designed engine.

Engine 2 : if the decompression and the compression on normal compressors will lead to the seperation of

oxygen and hydrogen (one liquid , one gas). It means that it will surely work on compressors on valves,

Because the latest worked perfectly. The decompression and the seperation of oxygen from hydrogen is the

law of the clouds and the compression follows the rules of liquifaction.

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